

Development of Animated Videos with the Doratoon Application on Trade Materials Between Region and Countries

Pengembangan Video Animasi IPS dengan Aplikasi Doratoon pada Materi Perdagangan Antardaerah dan Antarnegara

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Marta Juliati Sidabutar^{1*}, Natalia Ayu Lestari Sidabutar²

¹ Universitas Negeri Medan, Medan, Indonesia

² Universitas Islam Negeri Sumatera Utara, Medan, Indonesia

*E-mail: nataliayulestarii@gmail.com

Abstract

Based on the results of field observations, the problem was found to be the absence of interactive learning media applied by teachers in the learning process. This research aims to develop learning media in animated videos based on adoration learning on the trading materials between regions and countries. The type of development research with the ADDIE (Analyze, Design, Development, Implementation, and Evaluation) model applied to this research. MTs Negeri 4 Mandailing Natal, with a population in class VIII. The instruments used in the study were feasibility and practicality media experts 80% (adequate), design experts 85% (very feasible), and educators 87% (very achievable). While the results of the research were in the implementation stage, namely: individual trial 96,67% (very positive), small group trial 91,2% (very positive), and field trial 92,12% (very positive). Doratoon-based animated video learning media is developed quality (valid) requirements and used as a learning medium in the class.

Keywords: Learning Media, Social Studies Economics Animation Video, Duration.

Abstrak

Berdasarkan hasil observasi lapangan, ditemukan bahwa terdapat kendala dalam penerapan media pembelajaran interaktif oleh para guru selama pelaksanaan proses pembelajaran. Tujuan dilakukannya penelitian ini adalah untuk menghasilkan media pembelajaran dalam bentuk video animasi berbasis doratoon pada materi perdagangan antardaerah dan antarnegara yang layak (valid) dan praktis. Metode penelitian yang digunakan menggunakan jenis pendekatan pengembangan dengan menerapkan model ADDIE (*Analysis, Design, Development, Implementation, and Evaluation*). Penelitian ini dilaksanakan di MTs Negeri 4 Mandailing Natal dengan subjek penelitian melibatkan populasi siswa kelas VIII. Instrumen yang diterapkan pada penelitian ini berupa angket kelayakan dan kepraktisan. Teknik analisis data memanfaatkan analisis data deskriptif. Hasil penelitian yaitu berasal dari ahli media 80% (layak), ahli desain 85% (sangat layak), pendidik 87% (sangat layak). Sedangkan hasil penelitian pada tahapan implementasi, yaitu: uji coba perorangan 96,67% (sangat positif), uji coba kelompok kecil 91,2% (sangat positif), uji coba lapangan 92,12% (sangat positif). Media pembelajaran berbentuk video animasi berbasis doratoon dikembangkan memenuhi syarat kelayakan (valid) diterapkan sebagai media pembelajaran di kelas.

Kata Kunci: Media Pembelajaran, Video Animasi IPS Ekonomi, Doratoon

1. Introduction

Technological advances that are growing increasingly rapidly make various changes in the life sector, one of which is the education sector. Nowadays, many students use multiple kinds of technological media, including computers, laptops, and smartphones. These specialized media are used to play games, search for learning references on the internet, and interact with friends, teachers, parents and family (Marryono Jamun, 2018). In addition, educators can use technology as an exciting learning medium in providing information about subject matter to students. The media used can be in the form of applications, including Zoom, Google Classroom, quiz, word wall, Google Meet, Prezi, Animaker, and Powtoon (Nurillahwaty, 2021).

Education is one of the challenges in today's technological advances. Educators are directly related as users in the education process, while students are the main subject of the target in every change (Sidabutar & Reflina, 2022). Menurut (Hasbullah, 2013) Education is a tool or intermediary to produce future successors who are intelligent and superior and can compete competitively and achieve a higher standard of living. Educational goals can be realized if the teacher has a role as a resource person or facilitator who is active, creative, innovative, practical and fun during the learning process (Ardianto, 2022). Therefore, the importance of utilizing and developing exciting and innovative learning media is an urgent need in education, especially amid technological advances today.

Khoirina & Arsanti (2022) stated that the utilization of learning media could improve the learning process in class by (1) establishing the curiosity and enthusiasm of students, (2) learning becomes more interesting, (3) teaching using varied methods, (4) students are more active, (5) student learning outcomes increase. However, in practice, during the learning process in the classroom, there are still many who do not utilize learning media. This is due to the lack of complete facilities in the school and teachers who are less familiar with using the digital world.

Learning media is very different and of various types nowadays. Teachers can also access the media using smartphones, computers, and laptops. Even the media can be accessed or created anywhere and anytime. One of the many exciting learning media we can make is with Doratoon animation maker. Doratoon animation maker, or what is often said as doratoon is a platform for creating cartoon animations and various transitions in the field of information and communication technology. (Rabiah & Widodo, 2023). According to Geeks Around the Globe research (Umar, Hanum & Hutagalung, 2022), duration is a great application because it can create maximum interaction in making and creating videos with its features. In contrast, (Apriliana & Rochmawati, 2023) Doratoon is a website-based software that is easy to learn for educators who want to create exciting and varied learning media. Duration has several features, such as cartoon animation, audio, text, transitions, and others.

Among subjects that exist at the level of Madrasah Tsanawiyah (MTs) are Social Sciences (IPS). The lesson will also feel boring when educators do not apply exciting and diverse learning media. This is because there is material about the economy in social studies subjects. As is known, students' reading interest in the present is relatively low, and some students become discouraged if studying calculations and easily bored if learning with the lecture method is applied in the classroom.

Some previous research shows that many educators want to create and develop learning media such as animated videos in the present because in addition to being feasible and practical to use, the media can also increase the learning motivation of students and hone the ability of educators in the present towards technological advances. According to research (Apriliana & Rochmawati, 2023), Mathematics subjects developed through Doratoon learning media get a

feasibility or validity value of 3.21, which means that learning media such as animated videos assisted by Doratoon is feasible to apply and have a learning motivation effect on students (Dimiyati, Fatah & Sudiana, 2023), Mathematics subjects developed through adoration learning media get a feasibility or validity value of 3.21, which means that learning media such as animated videos assisted by duration is feasible to apply and have a learning motivation effect on students. (Lestari et al., 2023) According to the results of the material expert validator, which is 87%, and the results of the validator by the media expert, which is 90%, it shows that adoration is feasible to use. The results of practicality by expert practitioners obtained a value of 91% and the results of the practicality of students of 90%, which means that Doratoon learning media is practical to be applied in learning.

So, it is also necessary to apply learning media for social studies subjects. Therefore, researchers are interested in doing research on donation-based animated videos. Especially the subchapter of trade material between regions and between countries. as well as knowing the feasibility of applying duration-based enthusiastic video learning media and the practicality of the press using the results of validation scores and student response questionnaires in class VIII Mts, which are the objectives of this study.

2. Literature Review

2.1 Video Learning Media

Video learning media is a form that uses moving visual and audio elements to convey information, concepts and knowledge to students. Using video media in an educational context allows students to learn through a combination of moving images and sound, enhancing understanding and motivating active engagement. Video media becomes an effective learning tool by efficiently integrating visuals and audio. Video learning materials include recorded presentations, demonstrations, animations, short films, or longer-form materials. The main advantage of video media lies in its ability to present simulations of real situations, experiments or content that is difficult to realize through other media. (Saman, 2023)

His research (Yudianto, 2017) found that video media in the context of learning has several functions. First is the attentional function, where video media can attract attention and direct the audience's concentration on the material presented. The second is practical, where video media can arouse the audience's emotions and attitudes. Next, there is a cognitive function to accelerate the achievement of learning objectives by helping audiences understand and remember messages or information through images or symbols. Finally, the compensatory function provides context to audiences with difficulty organizing and retaining information. Thus, video media is a visual and auditive learning tool and a solution to facilitate understanding and participation, especially for learners who may face barriers in their learning process.

Video as a learning medium displays moving images and sound (Astuti, 2014), highlighting video's advantages, including its ability to show specific movements to facilitate student imitation. Video is also considered an independent learning tool, allowing students to learn quickly. Thus, the advantages of using video learning media include faster comprehension of material, clear demonstration of movements, flexibility in playback, increasing the effectiveness and efficiency of learning, attracting students' interest, supporting independent learning, and improving the overall quality of learning.

3. Research Methods

Research and Development (R&D) or another name for development research is the type of research applied in this study. According to (Hasnunidah, 2017) The process applied when improving and validating educational products is called development research. The product created is an animated video. Meanwhile, according to (Sugiyono, 2021) penelitian dimanfaatkan untuk menciptakan suatu produk pilihan dan menguji keberhasilan barang merupakan pengertian dari penelitian pengembangan. Model ADDIE adalah model pengembangan dan riset yang diterapkan pada penelitian ini. ADDIE terdapat 5 bagian, yakni Analyze, Design, Development, Implementation and Evaluation (ADDIE) (Mulyatiningsih, 2011) stated that the ADDIE model is considered rational than other models. Therefore, this model can be utilized in several types of product development, including learning models, learning strategies, learning methods, or learning media.

This research chose the ADDIE model because it has advantages over other methods. The benefits of this model include having a simple and systematically structured model and nature so that it is easy to implement.

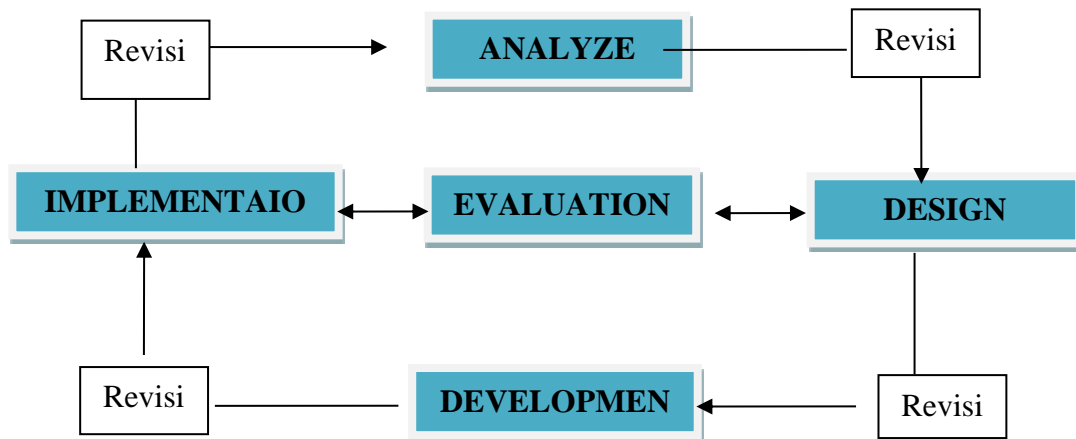


Figure. 1. ADDIE Research Procedure

Some validators and learners in this study were used as the research subjects. The research validator consists of 3 people: a media expert, a design expert, and an educator. Learners are the target of using the product being carried out, which is all eighth-grade students of MTs Negeri 4 Mandailing Natal, totalling 306 students. Qualitative and quantitative research was chosen as the research model to be applied. Qualitative data comes from the results of recommendations, input, and criticism given during learning media development. While the media feasibility test results shown to educators and students on learning media come from quantitative data, Sugiyono (2017) explains that data accumulation is the first step in research. Because the initial purpose of conducting a study is to find data, the data in question can be obtained using the following methods: 1) observing learning activities and the use of learning media or what is often called observation, 2) asking some questions to educators to get information known as interviews, 3) providing validation sheets to several validators, educators or social studies teachers in schools and students, in the form of questionnaires, 4) preparing information in the form of supporting documents assert and pictures during the research process or called documentation. Researchers used data from a questionnaire to assess the extent to which the media used is appropriate in this study. The questionnaires that have been provided are given to material validators, media

validators, and ips educators. The questionnaire is in checklist format with a Liikert scale structure of values 1-4. The formula for obtaining feasibility analysis results (Mashuri & Budiyo, 2020) :

$$P(\%) = \frac{\text{score obtained}}{\text{skor maksimalscore obtained}} \times 100\%$$

Based on research (Handayani, Putra & Yetri, 2018), after obtaining the feasibility, the validity standard was then determined.

Table. 1. Eligibility Level Criteria

Value	Criteria
$0\% < \bar{x} < 25\%$	Sangat Tidak Layak
$25\% < \bar{x} < 50\%$	Not Feasible
$50\% < \bar{x} < 75\%$	Worth
$75\% < \bar{x} < 100\%$	Very Feasible

To obtain the results of the practicality score in this study, the researchers used the results of the educator and learner response questionnaires using the following formula:

$$R_i = \frac{\sum_j^n p_j}{s\text{Maximum score of the } i - \text{th aspect}} \times 100\%$$

Description:

R_i = Percentage of i-th aspect response

p_j = Jth statement score

n = Number of statements in the i-th aspect

The average total presentation can be calculated using the following:

$$RT = \frac{\sum_{i=1}^m R_i}{m}$$

Description:

RT = Average total Percentage

R_i = Percentage of i-th aspect response

m = Number of aspects

Furthermore, to find out the response category from the percentage results can be seen using the thickness below:

Table. 2. Teacher and Student Response Categories (Yamasari, 2010)

Value	Criteria
$85\% \leq RT$	Very Positive
$70\% \leq RT < 85\%$	Positive
$50\% \leq RT < 70\%$	Less Positive
$RT < 50\%$	Not Positive

4. Results and Discussion

The following are the results of the research and discussion of research using the ADDIE model:



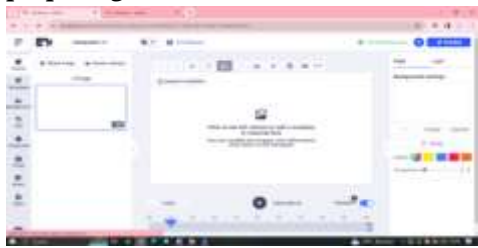

4.1 Analysis Phase

The first phase is analysis. In this phase, the analysis is carried out in the form of analyzing the media used, the curriculum, essential competencies, achievement indicators and learning objectives.

4.2 Design Phase

Design is applied based on previous analysis results, and a learning media scheme is created with the help of the Doratoon platform. Researchers prepare the material, background, backsound, and storyline in this phase.

Table 3. Stages of the Design Phase of Doratoon-based Social Studies Animation Video

Stages	Activities
1	Preparing applications for designing animated videos, namely the adoration application 
2	Work display form for making animated videos using the duration application 
3	Inserting each component that has been prepared previously for preparing the animation video to the next stage. 
4	We are entering prepared materials and supporting images into the duration application. 

5 We are entering prepared materials and supporting images into the Doratoon application.



4.3 Development Phase

In a conceptual context, it is realized into a creation ready to be implemented in the development stage. Here is the animation video that has been developed:



Figure. 2. Initial cover view



Figure. 3. Material topic display



Figure. 4. Material Display



Figure. 5. Display of Material Content

Validators carry out validation to find out their opinions and assessments of the feasibility of the learning media that has been developed.

Table. 4. Media Expert Assessment

Media Aspects	Assessment	Criteria
Display Design Aspect	77%	Worth
Audio	60%	Less feasible
Video	80%	Worth
Animation	80%	Worth
Ease of Media Use	96%	Very Feasible
Total Percentage	80%	Worth

Based on the table above, media experts provide an assessment of the adoration-based animation video developed based on five aspects, namely: the display design aspect obtained an evaluation of 77%, the audio element obtained an assessment of 60%, the video aspect obtained an assessment of 80%, the animation aspect received an evaluation of 80%, the element of ease of

use of the media got an evaluation of 96%. Overall, the assessment given by media experts is 80%, with a decent category. The conclusion is that the developed duration-based animation video is feasible to test in the field. The next stage is an assessment by a design expert validator.

Table 5. Design Expert Assessment

Aspects	Assessment	Criteria
Content	77,78%	Worth
Aspects of Learning Model with Media	90%	Very Feasible
Learning Aspects	92%	Very Feasible
Percentage Total	85%	Very Feasible

Based on the table above, learning design experts provide an assessment of the duration-based animation video developed based on three aspects, namely: the material content aspect obtained an assessment of 77.78%, the element of the learning model with the media obtained an evaluation of 90% and the learning aspect obtained an examination of 85%. Overall, the assessment given by the design expert is 85%, with very feasible criteria. In conclusion, creating the adoration-based animation video is worth testing in the field and the assessment of social studies educators.

Table 6. Social Studies Educator Assessment

Aspek	Average Score	Category
Content	82,22%	Very Feasible
Media Aspects	90%	Very Feasible
Aspects of Attractiveness of Use in Learning	92%	Very Feasible
Percentage Total	87%	Very Feasible

Assessment of social studies educators showed the acquisition of the results of the material content aspect 82.22%, which is a very feasible category, and the media aspect 90%, including the category, is possible. Regarding the application's attractiveness in learning 92%, including the category, is very achievable. So as to obtain a total percentage of 87% very feasible category. So the donation-based animation video developed meets the needs of the social studies learning process.

4.4 Implementation Stage

Implementation was carried out in class VIII MTs Negeri 4 Mandailing Natal. In this phase, individual trials were given to 3 students, and small group trials were given to 9 students and given to 32 students during the field trial.

Table 7. Individual Trial

Component	Assessment	Criteria
View	93,33%	Very Positive
Usage	91,66%	Very Positive
Material	97,78%	Very Positive
Total Percentage	96,67%	Very Positive

According to the results of individual trial research, the display component assessment obtained 93.33% very feasible criteria. The use component is 91.66% very positive criteria, and the

material component is 97.78% very positive. So, the total Percentage of individual trials obtained 96.67% very positive criteria.

Table. 8. Small Group Trial

Component	Assessment	Criteria
View	94,00%	Very Positive
Usage	92,00%	Very Positive
Material	87,73%	Very Positive
Total Percentage	91,20%	Very Positive

According to the small group trial research, the assessment of the display component was 94.00%, a very positive criterion. The use component is 92.00% very positive criteria, and the material component is 87.73% very positive. So, the total Percentage of individual trials obtained 91.20% very positive criteria.

Table. 9. Field Trial

Component	Assessment	Criteria
View	95,68%	Very Positive
Usage	92,20%	Very Positive
Material	94,70%	Very Positive
Total Percentage	92,12%	Very Positive

The total value of student responses based on the assessment aspects is 92.12%, classified into a very positive category. The conclusion is that the media has become a product that can be applied as a learning media that is very feasible in learning Economic Social Studies class VIII MTs Negeri 4 Mandailing Natal.

The total assessment of expert validation and student responses from the three donation-based animated video media development tests was 93.33, including a very feasible category. The evaluation of students' reactions to the animated video is that it can be applied when learning economic and social studies carried out for class VIII MTs Negeri 4 Mandailing Natal.

4.5 Evaluation Stage

The evaluation stage is the last. Evaluation begins at the analysis stage until implementation. Improvements are also made following the results of research provided by validators, the response of social studies educators and all students. Suggestions and enhancements to the duration-based social studies learning media have been appropriately revised.

5. Conclusion

The research results are developing learning media through donation-based animated videos on inter-regional and interstate trade material. The average results of the feasibility test assessment conducted by several validators, such as material experts, media, design, social studies educators, individual trials, group trials and field trials, get an average score of 89.43% and are included in the "very feasible" group. So, it can be concluded that the animated video-based social studies learning with inter-regional and interstate trade material developed is feasible to be applied in learning at school, both in and outside the classroom.

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